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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/759,920	01/12/2001	Wayne Kelly	MCA-489 US	2777

7590 11/14/2003

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EXAMINER	
MENON, KRISHNAN S	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 11/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

A8

Office Action Summary	Application No.	Applicant(s)	
	09/759,920	KELLY ET AL.	
	Examiner	Art Unit	
	Krishnan S Menon	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 October 2003* .

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11 and 58-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11 and 58-78* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claims 11 and 58-78 are pending.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim 11 is rejected under 35 U.S.C. 102(b) as anticipated by applicant's own admission of prior art.

The basis for the newly added limitation in claim 11, zeta potential of about 0 mV to about -- 5mV, when combined with the limitation of pH about 4 can be found only in Fig 5. No membranes seem to fall within the strict limitations of the claim in Fig 5. However, by assuming that "pH about 4" means a pH in the range a little below 4 to a little above 4, and "about 0 mV to about –5 mV" to mean a bit above 0 mV to a bit below –5 mV, only two data points could fall in these ranges from Fig 5 – that of filter 3 and filter 2. Table III on page 15 of the specification shows that while filter 2 is a surface modified Millipore filter, filter 3 is a commercially available filter with no modification done to it by the inventors. Since the filter is a commercial filter used as is, and it performs as claimed in claim 11, the filter inherently anticipates the claim. Under the principles of inherency, if a prior art device, in its normal and usual operation, would necessarily perform the method claimed, then the method claimed will be considered to be anticipated by the prior art device. When the prior art device is the same as a device described in the specification for carrying out the claimed method,

it can be assumed the device will inherently perform the claimed process. In re King, 801 F.2d 1324, 231 USPQ 136 (Fed. Cir. 1986)

2. Claims 11, 58-63,69-72, 74, 78 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Pall et al (US 4,431,545).

Pall (545) teaches a process for filtering a fluid containing charged particles comprising filtering through filters having nominal pore size between 0.1 and 10 microns and having zeta potential between 0 and -5 mV. (abstract, col 1 lines 15-24, col 2 lines 20-27: zeta potential less than 20 mV (absolute); col 3 line 25-col 4 line 15) as in claim 58, with pH about 4 as in claim 11 (col 10 lines 18-25). The membrane surface can be substantially neutral as in claim 59: instant application discloses zeta potential as between –10 and 10 mV for 'substantially neutral' in page 6; zeta potential less than 20 mV in the ref encompasses this range of 'substantially neutral'. LRV of at least 3 as in claim 60 and 61(see abstract). Neutral surface is inherent in one or more of the filters as in claim 62 (col 2 lines 20-27: small zeta potential). Formed by surface modification as in claim 63 (col 4 line 40-col 5 line 20; col 8 line 55 – col10 line 25). Filter material is a polyolefin, or polyethylene as in claim 69 - 71 (col 8 lines 38-55). Two or more filters of different IEP as in claim 72 (see abstract). Treating with acrylic acid as in claim 74 (col 8 lines 50-55). LRV of at least 3 for particle diameters less than the pore dia as in claim 78 (col 13 lines 35-51).

Re the newly added limitation of 'each having a zeta potential between about 0 and –5 mV' in the independent claims 11 and 58, the claims are open-ended and therefore, do not preclude having other filters in addition to the 'one or more filters … each having…'.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 64,65 and 75-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (545) in view of Mayhan (US 4,311,573).

Pall (545) discloses all the elements of instant claims as in claim 58. Instant claims add further limitations of the photoinitiator and cross-linking or grafting modification to the filter surface. Mayhan (573) teaches such modifications (abstract, col 6 lines 18-35, examples 4,5). It would be obvious to one of ordinary skill in the art at the time of invention to use the Mayhan (573) teachings to modify the surface of the Pall (545) filters as alternate but equivalent hydrophilic surface product for equivalent function because Mayhan (573) teaches these methods to improve the hydrophilicity of the membrane (abstract).

2. Claims 66 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (545) in view of McRay (US 5,582,725).

Pall (545) teaches all the limitations of claim 58 but does not disclose ceramics or metals as the filter media as in instant claims. McRay (725) discloses ceramics and metals as filter media (col 2:20-33). One of ordinary skill in the art at the time of invention could chose metal or ceramic materials as alternate but equivalent to the materials in Pall (545) teachings for the filters, and the metals could be stainless steel, etc., because they give increased filtration pressure resistance.

3. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (124) in view of Pall (US 4,430,479).

Pall (545) teaches all the elements of claim 17 as in claim 1 above, except the cellulosic materials for the filter. Pall (479) teaches using cellulosic filter for microporous membranes (col 1 lines 44-53). It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Pall (479) in the teachings of Pall (545) to provide a hydrophilic surface (Pall 545: col 8 line 68).

4. Claim 73 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pall (545) in view of Pall (US 4,617,124).

Pall (545) teaches all the limitations of claim 58. Claim 73 adds further limitation of filters being treated with monomers like acrylamide, which Pall (545) does not teach, but Pall (124) teaches. It would be obvious to one of ordinary skill in the art at the time of invention to use the teaching of Pall (124) in the teaching of Pall (545) for cross-linking as taught by Pall (124).

Response to Arguments

Applicant's arguments filed 10/6/03 have been fully considered but they are not persuasive. Argument re Claim 11 has already been addressed in the rejection.

Applicant's argument re the Pall (545) reference as having membranes with both positive and negative zeta potentials: The claims use the open ended language 'comprising' which does not preclude the ref from having other membranes in the method of filtration. The claims require only one or more filters 'each having .. 0 to –5 mV'. Pall has a filter which would have a zeta potential between zero and –5 mV, since Pall teaches that the zeta potential is less than 20 mV (absolute), and

there is at least one negative membrane. It may also be noted that by applicant's own admission in the specification (page 15, under sub-title Zeta Potentials for Test Filters') and Fig 5, most filters cross the zero ZP at some pH value. Therefore, even if Pall has a positively charged filter, it could show a negative zeta potential at some low pH, that could fall in the range of 0 to –5 mV. Please note that only claim 11 has the pH limitation that keeps the positive filters of Pall (545) in the positive zeta potential range.

Arguments that the secondary references do not overcome the deficiency of 'each membrane having zeta potential of 0 to –5mV'of Pall (545): secondary references were used to overcome the specific deficiencies in Pall as described in the rejections, and none of them is for overcoming the 0 to –5mV zeta potential.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Krishnan S Menon whose telephone number is 703-305-5999. The examiner can normally be reached on 8:00-4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda L Walker can be reached on 703-308-0457. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Krishnan Menon
Patent Examiner

W. L. WALKER
SUPERVISORY PATENT EXAMINER
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